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TAGS: PREL PTER MASS MARR MOPS
SUBJECT: USACE TUNNEL EXPERTS PROPOSE TECHNICAL SOLUTIONS TO SMUGGLING PROBLEM

Classified By: DCM Stuart Jones for reasons 1.4(b) and (d).

Summary

¶1. (C) A U.S. Army Corps of Engineers (USACE)-led team of tunnel detection experts visited Egypt's border with Gaza on November 15 to assess whether technical equipment would assist the Ministry of Defense in detecting and exploiting tunnels used in smuggling. The team presented its preliminary report (below) to MoD officials on November 21 and recommended that MoD develop a core team of tunnel detection/exploitation experts and procure equipment to assist with tunnel detection and network mapping. MoD officials promised to consider seriously the report's recommendations and to seek Field Marshal Tantawi's permission to open an FMS case to procure, on a phased basis, the equipment and training that the USACE team recommended. End summary.

Tunnel Experts' Report

¶2. (SBU) On November 21, a USACE tunnel expert team, led by Dr. Jason McKenna, presented exerpts from the following preliminary draft report to Assistant Minister of Defense for Policy MG Al Assar, Assistant Minister of Defense for Armament MG Fouad Abdel Halim, and U.S. Liaison Chief MG Mo'taz.

Begin text:

Since the late 1980's, significant numbers of cross-border subterranean tunnels have been identified on the Egyptian/Gaza Border (the "Philadelphi Road"). These clandestine tunnels create clear vulnerability along a highly sensitive border region and constitute an unchecked method of entry for the introduction border region and constitute an unchecked method of entry for the introduction of trans-nationals who may desire to carry out terrorist attacks against the Egyptian nation as well as facilitate prolific weapons smuggling operations.

In the United States, technologies expected to detect tunnels have met with limited success. Many tunnels are thought to exist along the U.S.-Mexican border, but remain undetected because of the technological challenges of identifying small voids in large, complex geographic and geologic areas. Recent efforts however to fuse HUMINT developed by the San Diego Tunnel Task Force (TTF) and MASINT technology from

several U.S. Government Agencies by Joint Task Force-North and their parent organization, U.S. Northern Command (NORTHCOM) have begun to make substantial progress in the vicinity of greater San Diego, CA, and other SW U.S. border areas.

Drawing upon recent experience in both CENTCOM and NORTHCOM, a team of scientists and Law Enforcement Agents (LEAs) from the U.S. Army Engineer Research and Development Center, Geotechnical and Structures Lab (ERDC-GSL), the U.S. Drug Enforcement Administration (DEA), U.S. Immigration & Customs Enforcement (ICE), and Joint Task Force-North (JTF-N) performed a site survey near the Rafah border crossing to recommend detection/exploitation (defined here as mapping and surveying) technology to the Government of Egypt (GOE) to help defeat clandestine tunneling activity.

In many ways, the situation in Rafah presents as the "worst case scenario" for detecting and exploiting clandestine tunnels. Some of these conditions can be used to the advantage of the GOE and will be discussed in detail in the main report body. However, the tunnels in this area are uniformly:

- small diameter (0.2-0.9m)
- deep (up to 8-20m)
- long (200-1000m)
- posses limited infrastructure (electrical wires are removed after use)
- egress either in dense urban areas that preclude rigorous surveillance on the Gaza side of the border
- egress in agricultural fields (sandbagged and covered with up to 2m of soil for later use)
- unmapped, but are suspected to be primarily feeder tunnels

into main tunnels (also unmapped)
- generally dry (do not require pumps or water disposal)
- cannot be entered at the Gaza Border
- are potentially used infrequently

The team experts tasked with identifying material solutions and developing training, techniques, and practices (TTPs) for their use believe that the concurrent priorities for the GOE are:

¶A. To bound the scope of clandestine tunneling along the Gaza border by:

-- Exploiting known feeder tunnels with small, maneuverable unmanned ground vehicles (UGVs) and energized wires to develop a quantitative map of the clandestine tunnel network (feeder and main tunnels egress points) and begin subsurface surveillance operations.

-- Installing a fixed-emplacement, passive seismic-acoustic tunnel activity detection system to identify new construction and recurring use of existing tunnels (which is highly in our opinion); and

¶B. To introduce, as effective exploitation TTPs and fixed subsurface sensors are concurrently placed, the following handheld and towed sensors to aid the BGF in detecting new and existing feeder tunnels/egress points in the Egyptian Rafah area away from the immediate border fencing.

-- Handheld and Overwatch IR cameras to help the BGF identify shallow thermal anomalies from sandbagged and filled in tunnel entrances as well as tunnel vent holes.

-- Towed Electromagnetic Induction (EMI) systems to help the BGF map out the shallow feeder network of tunnels, infrastructure,and shallow geologic conditions suitable for constructing tunnels.

Although the technology recommended above is readily available commercially, it will require significant customization for the BGF's applications. Some of the technologies listed above rely on the presence and signatures

of power conduits, water pumps, or forced-air systems that are present in some typical cross-border tunnels. Additionally, the environmentally noisy surface environment can be problematic for some techniques. It is therefore important that the BGF and U.S. jointly:

- Demonstrate the capabilities and limitations of each candidate technology for tunnel detection over actual clandestine tunnels;
- Document the strengths and weaknesses of each candidate technology in its current configuration, including time required, accuracy, and operational ease;
- Document the parameters measured by each technology in its current configuration;
- Provide specific feedback to the teams for future refinement based upon the demonstrated performance.

We also recommend that a team of experts from the U.S. also help the GOE train a Tunnel Detection/Exploitation/Remediation Team. The GOE team should receive:

- Detection Training, Techniques, and Practices (TTPs)
- Exploitation/Law Enforcement TTPs
- Remediation TTPs
- Equipment installation/operation/maintenance training
- Tunnel Database Creation/management training.

End text.

Preliminary MoD Reaction

¶3. (C) MG Fouad told us that he will review the team's recommendations and then seek Field Marshal Tantawi's approval to open an FMS case for equipment procurement and training. Dr. McKenna said he hopes to finalize his detailed equipment recommendations by early December, so that the FMS case can be processed quickly. MG Fouad expressed a preference for procuring the equipment in phases, so that the appropriate team of MoD tunnel detection experts can train

and then use the new detection technologies on a test basis along a limited area of the border. Comment: Although many key details remain to be finalized, we consider MoD's favorable initial response to the recommendations encouraging. RICCIARDONE